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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,425

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Gordon Bremer

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THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP

600 GALLERIA PARKWAY, S.E.

STE 1500

ATLANTA, GA 30339-5994

EXAMINER

TSE, YOUNG TOI

ART UNIT

PAPER NUMBER

2611

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/689,425

**Applicant(s)**

BREMER ET AL.

**Examiner**

YOUNG T. TSE

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 April 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-14, 18, 20-22 and 24-72 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 14, 18, 20-22, 24, 25, 28, 31-36, 50, 51 and 53-72 is/are allowed.  
6) ☒ Claim(s) 2-4, 6, 8-13 and 37-40 is/are rejected.  
7) ☒ Claim(s) 5, 7, 26-27, 29, 30, 41-49, 52 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-848)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claims 47 and 52 are objected to because of the following informalities:  
Claims 47, line 3, "the negotiated value" should be "the negotiated limiting value".  
Claim 52, line 1, "the limiting value" should be "the value".  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-4, 6, 9-12, and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein (U.S. Patent No. 5,265,151) in view of Gultekin et al. (U.S. Patent No. 6,215,793, hereinafter "Gultekin").

Goldstein discloses a first modem 1 and a second modem 2 in Figure 1, wherein each modem comprises a transmitter circuit 34a or 34b for transmitting data to a receiver circuit 38b or 38a of another modem through a transmission channel 25, a receiver circuit 38b or 38a for receiving data transmitted from a transmitter circuit 34a or 34b of another modem through the transmission channel 25; a memory 32a or 32b; and a microprocessor 30a or 30b has accompanying program for demodulation, decoding as necessary, etc of the receiver circuit.

Referring to Figure 1, the receiver circuit of the receiving modem measures a signal noise ratio and an inter-modulation distortion (IMD), calculate an error rate for the transmission if the power of a transmission signal is maintained at its maximum permissible level. Col. 2, lines 18-49, col. 5, lines 33-48, col. 5, line 66 to col. 6, line 4, and col. 9, lines 10-52. Based on the control information of the receiving modem, the sending modem adjusts or control the power of the transmitted signal, the power can be adjusted to an optimal level to reduce error rate to a minimum, as the decrease in power increases the error rate due to signal noise ratio. Col. 3, lines 2-28 and col. 5, lines 49-56.

Regarding claims 2 and 37, for example, in claim 2, the receiver circuit of the receiving modem negotiates with a transmitting modem (notice since the transmission power level of the transmitting modem is based on the control information of the power

level of the receiving modem), a value for a first performance parameter, for instance, a value of the error rate; receives from the transmitting modem, a signal (the power of the transmitted signal) exhibiting the first performance parameter; determines the signal-to-noise-ratio for the received signal; and requests from the transmitting modem, an adjustment (the increment or decrement power level of the control information in the receiver circuit of the receiving modem) a second performance parameter associated with the received signal, wherein the power level of the second performance parameter is different from the error rate of the first performance parameter. In addition to claim 37, each modem comprises a well known demodulator within the receiver circuit 38a and 38b, a memory 32a or 32b, and a processor 30a or 30b has accompanying program for demodulation, decoding as necessary, etc of the receiver circuit (col. 4, lines 7-12 and 58-62) configured to perform the negotiating, the determining, and the requesting as mentioned in claim 2 above.

Goldstein fails to teach or suggest a step of negotiating, with a second DSL modem and/or a transmitting DSL modem, a limiting value of a first performance parameter.

Gultekin discloses a related communication system for communication between two transceivers and/or modems TRX1 and TRX2 in Figure 1 and teaches to negotiate a data rate for future transmission over a communication link (TL), a first transceiver (TRX1) proposes a limited number of data rate values to a second transceiver (TRX2). See abstract; col. 1, lines 9-14; col. 2, lines 17-31; and the description of Figure1 from col. 5, line 30 to col. 8, line 14.

Therefore, it would have been obvious to one of ordinary skill in the art to negotiate, for example, a limited number of values, such as data rate between Goldstein's modem 1 and modem 2 as taught by Gultekin in order select a phase wherein the first transceiver/modem and a second transceiver/modem at the other end of a communication link have to select one of the data rate values.

Regarding claim 3, the receiver circuit also receives from the transmitting modem, a second signal (IMD) exhibiting the first performance parameter and the adjustment of the second performance parameter.

Regarding claim 4, the second performance parameter is transmit power level. Col. 2, lines 46-54 and col. 5, lines 44-56.

Regarding claims 6, clearly, the negotiation of claim 2 is performed after receiving the first signal and before determining the signal noise ratio.

Regarding claims 9 and 38, the selection of the second parameter is from a plurality of possible performance parameters, for example, the increment and decrement of the transmitted power levels. Col. 4, lines 64-68.

Regarding claims 10 and 11, the steps performed in claim 2 are repeated until the first performance parameter of the received signal is marginally supported or until the received signal marginally supports the adjustment to the second performance parameter. Col. 2, lines 51-54.

Regarding claims 12 and 39-40, inherently, it is well known to a person skilled in the art that a received signal can be, for example, a frequency band received signal including sub-band or sub-carrier that often used in a received signal of an OFDM

communications system in order for the receiver circuit of the receiving modem to determine the signal noise ratio of a sub-band in the received signal and further adjust the second performance parameter associated with the sub-band of the received signal to generate the transmit power level to the transmitting modem.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein in view of Gultekin as applied to claim 6, an further in view of Betts et al. (U.S. Patent No. 5,682,378, hereinafter "Betts").

Regarding claim 8 as applied to claim 6, Goldstein discloses and teach that the second performance parameter is transmit power level, but does not explicitly show or suggest that the error rate of the first performance parameter is transmit data rate.

Betts discloses an analogous transmitting modem and receiving modem to improve the signal to noise ratio (SNR) of the receiver of the transmitting modem, wherein the transmitting modem is equipped with the ability to cancel the far listener echo. Betts also teaches that by doing so results in an improved SNR for the receiver of the transmitting modem, thus allowing higher data rates or reduced error rates. Col. 1, lines 26-57. In other words, when the error rate of the SNR in Goldstein's receiver of the transmitting modem is reduced, the data rate is SNR is higher.

Therefore, it would have been obvious to one of ordinary skill in the art that the error rate of the first performance parameter in Goldstein's receiver of the transmitting modem is transmit data rate as taught by Betts in order to increase or decrease the data rate based on the SNR of the received signal.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein and Gultekin as applied to claim 2 and further in view of Archibald et al. (U.S. Patent No. 5,369,703, hereinafter "Archibald") .

Regarding claim 13 as applied to claim 2, although Goldstein does not explicitly show or suggest that the received signal and the requested adjustment transmitted/received over the transmission channel 25 are two transmission channels over a primary channel and a secondary channel, respectively.

Archibald also discloses an analogous transmitting modem (local modem) and receiving modem (remote modem) in Figures 1 and 3, and teaches that currently modems provide command/control mode signaling over a low speed secondary channel superimposed over the primary data channel. Commands sent from one modem to another modem using a secondary channel are sent at a rate much slower than the primary channel data rate. Col. 1, lines 14-19. In other words, when the error rate or transmission rate of the received signal is slower than the transmit power level in the receiver of Goldstein's transmitting modem, the received signal needs to be transmitted over a primary channel and requested adjustment needs to be transmitted over a secondary channel as taught by Archibald.

Therefore, it would have been obvious to one of ordinary skill in the art to transmit the error rate of the received signal over a primary channel and the requested adjustment of the power level over a secondary channel in the receiver of Goldstein's transmitting modem as taught by Archibald in order to transmit two different signals, for



example, have two different transmission rates over two different transmission channels.

***Allowable Subject Matter***

7. Claims 14, 18, 20-22, 24-25, 28, 31-36, 50-51, and 53-72 are allowed.
8. Claims 5, 7, 26-27, 29, 41-46 and 48-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. Claim 52 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.
10. Claim 47 would be allowable if rewritten to overcome the objection set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is 571- 272-3051. The examiner can normally be reached on Monday-Friday 10:00-6:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on 571- 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2611

/YOUNG T. TSE/  
Primary Examiner, Art Unit 2611